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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,456	11/19/2003	Takashi Okuda	009683-486	3920
21839	7590	08/09/2004	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			NGUYEN, KHAI M	
POST OFFICE BOX 1404			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22313-1404			2819	

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/715,456

Applicant(s)

OKUDA ET AL.

Examiner

Khai M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6-7, 10, and 11 is/are rejected.
- 7) ☒ Claim(s) 2-5, 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-19-2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The application has not been checked to the extent necessary to determine the presence of all possible typographical and grammatical errors. However, Applicant's cooperation is requested in correcting any errors of which he/she may become aware in the application.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Karema et al. (US 5,061,928). Karema et al. discloses a sigma-delta modulator apparatus (Fig. 1), comprising: component separating unit (A) separating a signal component and an error component of an input signal from each other (-Q1); a delta-sigma modulator (B) modulating the signal error component separated by the component separating unit (see the abstract and column 4, lines 47-51); and an output operating unit (including elements 13-16, and 21).

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ritoniemi et al. (US 5,629,701). Ritoniemi et al. discloses a sigma-delta modulator apparatus (Fig. 1), comprising: component separating unit (1) separating a signal component and an error component of an input signal from each other (e); a delta-sigma modulator (2) modulating the signal error component separated by the component separating unit (see the abstract and column 3, lines 58-62); and an output operating unit (including elements 3-6).

6. Claims 1, 6, 7, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Bavel et al. (US 4,862,169).

Regarding claim 1, Van Bavel et al. discloses a sigma-delta modulator apparatus (Figs. 1-2), comprising: component separating unit (12 of Fig. 1 and/or loop 23 of Fig. 2) separating a signal component and an error component of an input signal from each other ('Analog Error' or Fig. 1 and/or signal 'z' of Fig. 2); a delta-sigma modulator (14 of Fig. 1 and/or loop 24 of Fig. 2) modulating the signal error component separated by the component separating unit (see the abstract); and an output operating unit (including elements 16, 18, and 20 of Fig. 1 and/or elements 60,62,...70 of Fig. 2).

Regarding claims 6-7 & 11, Van Bavel et al. discloses the component separating unit (loop 23) includes: a quantizer (32) quantizing an analog input signal; a first digital to analog converter (DAC) (36) converting the signal component (Y1) provided from the first quantizer (via the delay 34) to analog signal; and an adder (40) adding the analog

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input signal (the signal inputted between the delay 38 and quantizer 32) to the analog signal provided from the DAC (36).

Regarding claim 10, Van Bavel et al. discloses the apparatus including an attenuator (42) connected between the adder (40) and the delta sigma modulator (24).

### ***Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see the attached PTO-892).

### ***Allowable Subject Matter***

8. Claims 2-5 and 8-9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571-272-1809. The examiner can normally be reached on 8:30 to 5:00 M-F.

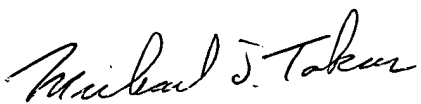
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KN

August 3, 2004

  
**Michael Tokar**  
Supervisory Patent Examiner  
Technology Center 2800